University of St Andrews

COMPUTING LABORATORY

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NEWSLETTER

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File Restores

Currently, the operators receive frequent requests for files to be restored which users have accidentally deleted. Several points should be borne in mind:

- The regular backups of the user disks are primarily intended to ensure that, in the event of a disk crash, the disk can be restored to as recent a state as possible.

- The backups are NOT designed to guard users from accidental deletion of their own files. Of course, in cases where a user has lost a significant amount of data which he cannot readily recreate, the Laboratory will take a sympathetic view and do its best to recover a recent copy of the file from its dump tapes. This may not always be possible.

- The availability of the tape drives, and the load on the system, will be adversely affected if the operators have to do restores too frequently.

Consequently, all requested for file restores should be made to the Advisory Service, not the operators. Requests should only be made if the amount of information lost is substantial.

NEC Spinwriters

Two NEC Spinwriters have been purchased and are now available to users; one is situated in the User Area of the Computing Laboratory and replaces the existing Qume terminal. The other has been sited with the terminals in the Psychology cluster. These new terminals complement the Spinwriter in the computer room, which currently serves the print queues A4$QUME and SYS$QUME.

The intention is that users with specialised requirements for the output of their documents can now use the publicly-available Spinwriter. Such needs include the use of single sheets, 'thimbles' containing special character sets or a different character pitch The operator-manned service on the Spinwriter will continue as before with continuous paper, a standard thimble (Elite 12UK) and 12 characters per inch pitch. Note that the hash symbol (#) appears as the sterling pound sign (£) on this thimble.

You should note that the Spinwriters are high-quality output devices and should only be used to produce final copies of documents. The documents must have some academic purpose; the Spinwriters are not provided for typing personal letters. Draft copies can be printed on the line-printer (on normal 8" paper or A4 forms). Multiple copies must not be printed on the Spinwriters; instead, these should be obtained by photocopying the final copy. The Spinwriters do not have a keyboard of their own, but instead run off the printer port of a Hazeltine display terminal. Prior to printing a document on the Spinwriter, you should type the locally-written command QUME which will set the terminal characteristics appropriate for the Spinwriter. It is possible to use the terminal as an ordinary VDU by leaving the Spinwriter switched off.

You can buy your own ribbon from the operators; alternatively you can use the ribbon already in the Spinwriter, which will give a light print density towards the end of its life. Non-standard thimbles can be obtained by special order; consult the Advisory Service for details.

USE OF RUNOFF

The following three points of difficulty frequently crop up in the use of DSR - the Digital Standard RUNOFF text-formatting package. It is not immediately apparent from the manual how to get round these difficulties and so the cures are described here.

Firstly, users often find that a new page of their document does not start at the top of the physical page when continuous paper is being used. To explain this phenomenon, the concepts of 'form size' and 'page size' must first be understood. The 'form size' is the maximum number of lines that can be accommodated on the paper being used for the output document; at 6 lines per inch, the 8" lineprinter paper used by the Laboratory can hold 48 lines and the continuous A4 paper can hold 72 lines. DSR, by default, assumes that the output form size will be 66 lines per page; the reason for this is that 11" paper is the commonly-used size for continuous forms. The 'page size' is the number of lines to be used in each page of the output document; usually this will not exceed the form size and it is set within the .RNO file by the .PAGE SIZE command.

DSR normally starts each page of the output .MEM file with a form-feed character which causes the printer to advance to the top of the next page. However, if the preceding page had contained exactly the same number of lines as the form size, then the printer would have already advanced to the top of the next form; in this event, a form-feed would generate a blank page and so DSR omits it. This sytem works satisfactorily provided that the form size has been set correctly. If the actual form size is 72 (for A4 paper) and the default form size has been used (66) then any page following a page of exactly 66 lines will not start with a form feed because DSR thinks that the printer is at the top of the form already; as a result, the next page continues on the same form as the previous page.

The solution is to override the default form size by using the /FORM_SIZE qualifier on the RUNOFF command. For example, RUNOFF/FORM_SIZE=72 should be used for A4 output. An additional question has been incorporated into the (locally-written) DSR command to give the user the opportunity to change the form-size.

The second point concerns underlining. By default, spaces will not be underlined. If you want a space to be underlined, then use the ACCEPT flag (_) in front of it so that it is treated as any other printable character. For example, "^&underline_this\&" in the .RNO file will appear as "underline this" in the .MEM file.

Lastly, the way in which DSR does hyphenation often causes confusion. There is NO automatic hyphenation facility within DSR. The user must decide whether a word can be hyphenated, and if so, where. To indicate where a word can be hyphenated, the equals sign '=' is used as a 'hyphenate flag'. When the hyphenation facility is enabled, then any words containing an = are potential candidates for hyphenation and the = sign indicates where the word can be broken. Note that a word can contain more than one = if it can be broken in several places. If it is not necessary for the work to be hyphenated, the hyphen flag naturally does not appear in the output document.

There are two commands to allow use of the hyphenation facility: .FLAGS HYPHENATE and .ENABLE HYPHENATION (or .EHY), with corresponding disabling commands .NO FLAGS HYPHENATE and .DISABLE HYPHENATION (.DHY). There are three distinct situations possible:

1. .NO FLAGS HYPHENATE has been set:

   In this case, irrespective of whether HYPHENATION is enabled or disabled, any = sign in the text is output as it is.

2. .FLAGS HYPHENATE and .DHY set (hyphenation disabled)

   Any = sign in the text is recognised as a potential hyphen but is not used and so does not appear in the output text. You must use _= in this case anywhere you want an = sign to appear in the output text.

3. .FLAGS HYPHENATE and .EHY set (hyphenation enabled)

   Any = sign in the text is recognised and is converted to a hyphen only where necessary; otherwise it will not appear in the output text. Again, you must use _= to output an = sign in such text.

As the default settings are .ENABLE HYPHENATION and .NO FLAGS HYPHENATE, you will see that to use the hyphenation facility, all you have to do is to precede the relevant section of text by .FLAGS HYPHENATE (and thus arrive at situation 3 above). Alternatively, if you have text full of = signs to indicate hyphenation points, but wish to avoid actual hyphenation in certain sections, you can have .FLAGS HYPHENATE set for the whole text (to recognise the = signs), and then use .DHY and .EHY respectively before and after those sections where hyphenation is not to be used.

Thus the existence of two enabling commands allows a greater flexibility in use, and the default setting of .ENABLE HYPHENATION means that = signs are both recognised and used as hyphens if only one command, .FLAGS HYPHENATE, is given.

Additionally, the .FLAGS HYPHENATE command may be used to change the hyphenation indicator for all or part of the text:

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.FLAGS HYPHENATE %
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for instance, will recognise % as the hyphenation indicator, and all the remarks relating to the = sign will now refer to %; any = signs in the text will now be output as ordinary characters.

GLOBAL SYMBOLS

The following global symbols, defined automatically when you log in, are now redundant and have been ear-marked for removal from the global login file:

A4PRINT	JOBSTART	OLDBASIC	OLDFORT
APPLYTREE	JOBEND	NEWBASIC	NEWFORT
DC	RSUBMIT		

Transfer of BBC cassette data to VAX

The Micro Group in the laboratory can now offer a file transfer service for micro users wishing to transfer programs on BBC-format cassettes to the VAX mainframes. The cassette files should be recorded at 300 baud if possible, but 1200 baud cassette files can be handled by arrangement. To record a file at 300 baud, type *TAPE3 then save in the normal way. To use the service, contact Alan Young (ext. 8205).

Microcomputer Demonstrations

A demonstration of Rank Xerox Microcomputer equipment has been arranged for Wednesday 14th and Thursday 15th March. It will take place in the Microcomputer User Area of the Mathematics Institute. Contact B. Campbell (ext. 8114) or P. Robertson (ext. 8112) for further details.

On Wednesday 21st March, Gate Microsystems of Dundee will be demonstrating their range of microsystems, which includes the Commodore and Apple products. The demonstration will be in the Microcomputer User Area (room C1, level 1 of the Maths. Institute) between 10 am and 4 pm. All interested are invited to attend.

NAG Library Mark 10

The latest version (Mark 10) of the FORTRAN NAG library will be available on the VAX system from Tuesday 28th February 1984. There are 28 new primary ("user-callable") routines in this latest version.

Users will access this library if they specify NAG/LIB in the LINK command. Only one routine that was available at Mark 9 of the library, C05NAF, has been withdrawn. The recommended replacement for this routine is either C05NBF or C05NCF. Another routine, D01FAF, has been scheduled for replacement at the next release of the library. Any users of this routine should start using its replacement, D01GBF, as soon as possible.

Further details about the NAG library can be found in the VAX HELP files and in the NAG library Manuals which are kept in the main terminal cluster areas. Note that the NAGHELP command is also available for use in getting on-line information about NAG routines.

It may be of some interest to users to know that 11 of the example programs listed in the NAG manuals are also supplied with the NAG library. In view of the shortage of disk space, however, these are not kept on-line at present. If you wish to obtain copy of a particular example program this can generally be arranged, although for relatively brief programs it would be quicker to type in the example yourself. Please contact Malcolm Bain (CLSMB, ext 8203) with requests for particular example programs.

SURFACE-II Graphics System

The SURFACE-II Graphics System, which can produce contour maps and 3-dimensional block diagrams from spatially distributed data, has now been interfaced to the GHOST-80 graphics system. Thus SURFACE-II pictures can now be produced on any of the graphics devices attached to the VAX systems. In particular, pictures can now be submitted to the Printronix printer/plotter and the high quality Benson 9211 plotter from any terminal.

The new implementation of SURFACE-II is invoked with the command

SURFACE2

This command cannot be abbreviated. As before you will be prompted for the names of the files containing the SURFACE-II commands to be executed and the data to be processed, and the files to which the execution report and text output should be directed. In addition you will be asked for the name of the (GHOST-80) gridfile to take the graphical output. The pictures thus deposited in this gridfile can subsequently be produced on any of the devices supported by GHOST-80.

Further details on SURFACE-II are contained in a free usernote (No. 4) available from the Computing secretaries and from the SURFACE-II Reference Manual which is kept in the Computing terminal area. Information on producing pictures from GHOST-80 gridfiles may be found in the GHOST-80 User Manual (especially chapter 3) and in HELP GHOST GRIDFILES on the VAX.

It is important to note that this implementation of SURFACE-II requires no modification to existing files of SURFACE-II commands or data, but does produce files of graphical output that are in a different format from those produced by the SURFACE command. Existing users are urged to start using the new system as soon as possible and to contact Malcolm Bain in the Computing Laboratory (CLSMB, ext 8203) if they cannot.

VAX Serviceability Figures

Overall service from 7 am 5th December 1983 to 7 am 2nd January 1984.

	SAVA hrs:mins	SAVB hrs:mins
Period covered time	672:00	672:00
Scheduled Preventive Maintenance	2:30	2:30
Scheduled Software Maintenance	0:00	0:00
Scheduled Back-up Dumps	0:45	0:30
Scheduled Systems Development	1:50	0:00
User Service	605:40	663:10
Time lost		
Unscheduled maintenance	0:00	4:15 (2)
Hardware faults	61:15 (1)	1:35 (2)
Software faults	0:00	0:00
Other lost time	0:00	0:00
System Recovery Time	0:00	0:00

SAVA (1) = Formatting and restoring RP07 with Bad Blocks 21:15 hrs 6-7/12/83
+ RP07 down "unsafe light" on 40:00 hrs 31/12/83 - 1/1/84
Reboots = 5, 3 scheduled plus 2 unscheduled.

SAVB (2) = WCS, PCS, Power Supply and Controller replaced 7/12/83.
Reboots = 4, 1 scheduled, 3 unscheduled.

Overall service from 7 am 2nd January to 8 am 30th January 1984.

	SAVA hrs:mins	SAVB hrs:mins
Period covered time	672:00	672:00
Scheduled Preventive Maintenance	2:30	3:00
Scheduled Software Maintenance	0:00	0:00
Scheduled Back-up Dumps	1:30	1:00
Scheduled Systems Development	3:05	3:50
User Service	588:55	626:40
Time lost		
Unscheduled maintenance	2:45 (2)	0:25 (4)
Hardware faults	57:00 (2)	4:50 (4)
Software faults	0:00	0:00
Other lost time	16:15 (1)	32:15 (3)
System Recovery Time	0:00	

SAVA (1) = Power dips, system put down 16/1/84
(2) = RP07 "unsafe light" on 2-4/1/84
Reboots = 10; Scheduled = 5:1pm, 4 S.Dev.Unscheduled =5:
1= power fault, Hardware faults = 4.

SAVB (3) = Power fluctuations, system put down 2, 3, 4 16/1/84
(4) = System disc corrupted 2, 16/1/84
Reboots = 13; scheduled =1, unscheduled=12: Power faults = 5, System hung = 2, Bug-checks = 2, Systems disc = 3.